

Amendments to the Claims:

The following lists all claims and their status:

1-4368. (cancelled)

4369. (currently amended): A mixture produced from a ~~portion of~~ a hydrocarbon containing formation, comprising:

a non-condensable hydrocarbons component comprising hydrocarbons having carbon numbers of less than about 5, wherein a weight ratio of the hydrocarbons having carbon ~~number numbers~~ from 2 through 4, ~~to methane, to methane in the mixture~~ is greater than approximately 1, and;

~~wherein the non-condensable hydrocarbons further comprise H₂, wherein greater than about 15 % by weight of the non-condensable hydrocarbons component comprises H₂; and~~
condensable hydrocarbons, comprising:

oxygenated hydrocarbons, wherein greater than about 1.5 % by weight of the condensable hydrocarbons comprises oxygenated hydrocarbons;

olefins, wherein less than about 10 % by weight of the condensable hydrocarbons comprises olefins; and

aromatic compounds, wherein greater than about 20 % by weight of the condensable hydrocarbons comprises aromatic compounds.

4370. (currently amended): The mixture of claim 4369, ~~wherein the non-condensable hydrocarbons further comprise ethene and ethane, and~~ wherein a molar ratio of ethene to ethane in the non-condensable hydrocarbons component ranges from about 0.001 to about 0.15.

4371. (currently amended): The mixture of claim 4369, wherein the condensable hydrocarbons ~~further~~ comprise nitrogen containing compounds, and wherein less than about 1 % by weight, when calculated on an atomic basis, of the condensable hydrocarbons is nitrogen.

4372. (currently amended): The mixture of claim 4369, wherein the condensable hydrocarbons ~~further~~comprise oxygen containing compounds, and wherein less than about 1 % by weight, when calculated on an atomic basis, of the condensable hydrocarbons is oxygen.

4373. (currently amended): The mixture of claim 4369, wherein the condensable hydrocarbons ~~further~~comprise sulfur containing compounds, and wherein less than about 1 % by weight, when calculated on an atomic basis, of the condensable hydrocarbons is sulfur.

4374. (currently amended): The mixture of claim 4369, wherein the condensable hydrocarbons ~~further~~comprise oxygen containing compounds, wherein about 5 % by weight to about 30 % by weight of the condensable hydrocarbons comprise oxygen containing compounds, and wherein the oxygen containing compounds comprise phenols.

4375. (original): The mixture of claim 4369, wherein the condensable hydrocarbons comprise multi-ring aromatics, and wherein less than about 5 % by weight of the condensable hydrocarbons comprises multi-ring aromatics with more than two rings.

4376. (original): The mixture of claim 4369, wherein the condensable hydrocarbons comprise asphaltenes, and wherein less than about 0.3 % by weight of the condensable hydrocarbons are asphaltenes.

4377. (original): The mixture of claim 4369, wherein the condensable hydrocarbons comprise cycloalkanes, and wherein about 5 % by weight to about 30 % by weight of the condensable hydrocarbons are cycloalkanes.

4378. (currently amended): The mixture of claim 4369, wherein the non-condensable ~~hydrocarbons further comprise~~ component comprises hydrogen, and wherein the hydrogen is greater than about 10 % by volume at 25 °C and one atmosphere absolute pressure and less than about 80 % by volume at 25 °C and one atmosphere absolute pressure of the non-condensable ~~component~~hydrocarbons.

4379. (currently amended): The mixture of claim 4369, further comprising ammonia, and wherein greater than about 0.05 % by weight of the ~~produced~~ mixture is ammonia.

4380. (original): The mixture of claim 4369, further comprising ammonia, and wherein the ammonia is used to produce fertilizer.

4381. (currently amended): The mixture of claim 4369, ~~wherein the condensable hydrocarbons further comprise hydrocarbons having a carbon number of greater than approximately 25,~~ wherein less than about 15 % by weight of the hydrocarbons have a carbon number greater than approximately 25.

4382. (currently amended): The mixture of claim 4369, wherein about 0.1 % to about 5 % by weight of the condensable hydrocarbons comprise ~~comprises~~ olefins.

4383. (currently amended): The mixture of claim 4369, wherein about 0.1 % to about 2 % by weight of the condensable hydrocarbons ~~comprises~~ comprise olefins.

4384. (currently amended): The mixture of claim 4369, wherein greater than about 25 % by weight of the condensable hydrocarbons ~~comprise~~ comprises oxygenated hydrocarbons.

4385. (original): The mixture of claim 4369, wherein the mixture comprises hydrocarbons having greater than about 2 carbon atoms, and wherein the weight ratio of hydrocarbons having greater than about 2 carbon atoms to methane is greater than about 0.3.

4386. (currently amended): A mixture produced from ~~a portion of a~~ hydrocarbon containing formation, comprising:

condensable hydrocarbons, wherein less than about 5 % by weight of the condensable hydrocarbons ~~comprises~~ hydrocarbons having a carbon number greater than about 25;

wherein the condensable hydrocarbons further comprise:

oxygenated hydrocarbons, wherein greater than about 5 % by weight of the condensable hydrocarbons comprises oxygenated hydrocarbons;

olefins, wherein less than about 10 % by weight of the condensable hydrocarbons comprises olefins; and

aromatic compounds, wherein greater than about 30 % by weight of the condensable hydrocarbons comprises aromatic compounds; and

a non-condensable hydrocarbons component comprising H₂, wherein greater than about 15 % by weight of the non-condensable hydrocarbons component comprises H₂.

4387. (currently amended): The mixture of claim 4386, wherein the non-condensable ~~hydrocarbons further~~component comprises hydrocarbons having carbon numbers of less than 5, and wherein a weight ratio of hydrocarbons having carbon numbers from 2 through 4, ~~to methane, to methane~~ is greater than approximately 1.

4388. (currently amended): The mixture of claim 4386, ~~wherein the non-condensable hydrocarbons comprise ethene and ethane, and~~ wherein a molar ratio of ethene to ethane in the non-condensable hydrocarbons component ranges from about 0.001 to about 0.15.

4389. (currently amended): The mixture of claim 4386, wherein the condensable hydrocarbons ~~further~~ comprise nitrogen containing compounds, and wherein less than about 1 % by weight, when calculated on an atomic basis, of the condensable hydrocarbons is nitrogen.

4390. (currently amended): The mixture of claim 4386, wherein the condensable hydrocarbons ~~further~~ comprise oxygen containing compounds, and wherein less than about 1 % by weight, when calculated on an atomic basis, of the condensable hydrocarbons is oxygen.

4391. (currently amended): The mixture of claim 4386, wherein the condensable hydrocarbons ~~further~~ comprise sulfur containing compounds, and wherein less than about 1 % by weight, when calculated on an atomic basis, of the condensable hydrocarbons is sulfur.

4392. (currently amended): The mixture of claim 4386, wherein the condensable hydrocarbons ~~further~~ comprise oxygen containing compounds, wherein about 5 % by weight to about 30 % by weight of the condensable hydrocarbons comprise oxygen containing compounds, and wherein the oxygen containing compounds comprise phenols.

4393. (currently amended): The mixture of claim 4386, wherein the condensable hydrocarbons ~~further~~ comprise multi-ring aromatics, and wherein less than about 5 % by weight of the condensable hydrocarbons comprises multi-ring aromatics with more than two rings.

4394. (currently amended): The mixture of claim 4386, wherein the condensable hydrocarbons ~~further~~ comprise asphaltenes, and wherein less than about 0.3 % by weight of the condensable hydrocarbons are asphaltenes.

4395. (original): The mixture of claim 4386, wherein the condensable hydrocarbons comprise cycloalkanes, and wherein about 5 % by weight to about 30 % by weight of the condensable hydrocarbons are cycloalkanes.

4396. (currently amended): The mixture of claim 4386, wherein greater than about 10 % by volume at 25 °C and one atmosphere absolute pressure and less than about 80 % by volume at 25 °C and one atmosphere absolute pressure of the non-condensable ~~hydrocarbons component~~ is hydrogen (H_2).

4397. (currently amended): The mixture of claim 4386, ~~further comprising ammonia, and~~ wherein greater than about 0.05 % by weight of the ~~produced~~ mixture is ammonia.

4398. (original): The mixture of claim 4386, further comprising ammonia, and wherein the ammonia is used to produce fertilizer.

4399. (currently amended): The mixture of claim 4386, wherein about 0.1 % to about 5 % by weight of the condensable hydrocarbons ~~comprises~~ comprise olefins.

4400. (currently amended): The mixture of claim 4386, wherein about 0.1 % to about 2 % by weight of the condensable hydrocarbons ~~comprises~~ comprise olefins.

4401. (currently amended): The mixture of claim 4386, wherein the condensable hydrocarbons ~~comprises~~ comprise oxygenated hydrocarbons, and wherein greater than about 15 % by weight of the condensable hydrocarbons comprises oxygenated hydrocarbons.

4402. (currently amended): The mixture of claim 4386, wherein the mixture comprises hydrocarbons having greater than about 2 carbon atoms, and wherein ~~the~~ a weight ratio of hydrocarbons having greater than about 2 carbon atoms to methane is greater than about 0.3.

4403-5395. (cancelled)